

Check Your Understanding

4. Create a picture by plotting and connecting the following points.

(a) Join these points with a smooth curve.

$$\left(8, \frac{\pi}{2}\right), \left(10, \frac{5\pi}{12}\right), \left(11, \frac{\pi}{3}\right), \left(-10, \frac{5\pi}{4}\right), \left(7, \frac{\pi}{6}\right), \left(3, -\frac{\pi}{2}\right), \left(7, -\frac{7\pi}{6}\right), \\ \left(10, \frac{3\pi}{4}\right), \left(-11, -\frac{\pi}{3}\right), \left(10, \frac{7\pi}{12}\right), \left(-8, \frac{3\pi}{2}\right)$$

(b) Connect these points with straight lines in the order given.

$$\left(10, \frac{7\pi}{2}\right), \left(-6, \frac{5\pi}{12}\right), \left(10, -\frac{8\pi}{3}\right)$$

(c) Join these points with a smooth curve.

$$\left(6, \frac{15\pi}{4}\right), \left(-6, \frac{14\pi}{3}\right), \left(6, -\frac{5\pi}{12}\right)$$

(d) Join these points with a straight line.

$$(6, 0), (-10, -5\pi)$$

(e) Join these points with a smooth curve.

$$(8, 245^\circ), (8, 265^\circ)$$

(f) Join these points with a straight line.

$$(-6, -240^\circ), (10, -60^\circ)$$

(g) Join these points with a straight line.

$$\left(6, \frac{23\pi}{6}\right), \left(10, -\frac{\pi}{6}\right)$$

(h) Join these points with a smooth curve.

$$(8, 690^\circ), (8, 6\pi)$$

(i) Connect these points with straight lines in the order given.

$$\left(10, \frac{13\pi}{12}\right), \left(-6, \frac{\pi}{12}\right), \left(9, -\frac{5\pi}{6}\right), \left(6, \frac{13\pi}{4}\right), \left(-10, -\frac{7\pi}{4}\right)$$

Investigation 3

Graphing Equations on Polar Paper

Purpose

- Plot trigonometric equations on polar paper.
- Examine the shapes of graphs of various polar equations and predict the graphs of other equations.